



1981 ANNUAL REPORT
OF THE
TECHNICAL SERVICES STAFF
TO THE
CHAIRMAN OF THE
COMMITTEE ON
RULES AND ADMINISTRATION
UNITED STATES SENATE



DECEMBER 1981

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GUIDELINES FOR INFORMATION PROCESSING AND COMPUTER SERVICE ACTIVITIES

The Committee on Rules and Administration shall have authority concerning policy, organization, initiation, implementation, operation and evaluation of all matters concerned with information processing and communications as they relate to mechanization, automation, computerization, or related functions.

All Senators, Committee Chairmen and Officers of the Senate shall address requests for such services to the Chairman of the Committee on Rules and Administration, with supporting documentation of the requirements.

At the direction of the Committee, its staff will consult with the requester, make any additions necessary to the documentation, and prepare a report for consideration by the Committee.

If the Committee favorably considers a study or action for initiation or implementation, it will direct its staff to take responsibility for the performance of the specified task in full consultation and agreement with the requester, who will be considered to be the user or recipient of such task or service. All statements of requirements, justifications, cost analyses and recommendations will be developed by the staff in conjunction with the users.

At the direction of the Committee, the staff will act as a project director (or will designate a project director) for the performance of all tasks or projects. This would include the selection, monitoring and evaluation of contractors and consultants, as well as Senate staff component support. In addition, the staff will be responsible for (or will delegate responsibility for) all implementation, operation, user orientation and training, and evaluation of any approved systems, including the procurement (or delegation of such procurement) of any supporting equipment or services.

At the request of a Senator, committee, or office, the Committee on Rules and Administration will provide for professional consultation concerning problems related to information processing, ongoing systems under the jurisdiction of the Senate, or systems proposed to the Committee for consideration.

The Committee will establish all policy concerning the operation of new services and systems, and will maintain the authority to have its staff be responsible for such operation, if so required. In addition, the Committee will assume the authority and responsibility for any related supporting activities not so stated above, as may become necessary from time to time.

Nothing in the foregoing is intended to preclude Senators, Committees, or Officers of the Senate from conducting independent preliminary studies or investigations of administrative practices and procedures, providing any consequent commitments in the name of the Senate with regard to information processing services be made through and by the Committee on Rules and Administration.

CONGRESSIONAL STAFF JOURNAL (AHLERS AND NELSON)

Responsibility for the *Congressional Staff Journal* was assumed by the Senate Committee on Rules and Administration in March 1981.

At the same time, a change was made in part of the production process—the ALTO computer system, operated by Senate Rules Committee staff, was used for the first time to produce camera-ready copy. (From 1975 until mid-1979, the publication was produced using the “hot metal” method. Electronic production was initiated in mid-1979, when use of the ATEX computer system began, and has been continued from March 1981 to the present time with ALTO.)

Publication of *Staff* under the jurisdiction of the Senate Rules Committee continues on a bimonthly basis, with distribution to all employees of the Senate.

Insofar as the production of the *Congressional Staff Journal* is concerned, ALTO has these advantages:

1. It provides hard copy, produced in-house, showing type size, type style and layout, and thus simplifies and expedites proofreading and the making of corrections.

2. It enables editorial staff to make rapid changes in type size, type style and layout, and thereby permits prompt, on-the-spot adjustments in the style, length and configuration of the text.

3. It eliminates much of the time-consuming process of pasting-up copy to prepare it for press.

OFFICE OF THE SERGEANT AT ARMS (SARMAN)

Equipment and services as authorized by the Committee on Rules and Administration are provided through the Office of the Sergeant at Arms. The Office consists of the Service, Parking, Telecommunications Departments, the Capitol Police, and the Computer Center.

SERVICE DEPARTMENT

This department is responsible for supplying non-computer office equipment such as automatic typewriters and mailroom equipment to the Senate offices. The Computer Center has installed an on-line inventory system to assist the department in controlling the authorized equipment. The department also prepares, addresses, and mails newsletters for Senator's offices using labels produced by the Computer Center and enforces the franking rules as they pertain to newsletters. The Senate has been authorized to send newsletters addressed to postal patrons and hearings are scheduled to be held by the Rules Committee as to when postal patron mailings should be initiated.

A Request for Proposal has been issued to procure a printing press to replace an older model.

CAPITOL POLICE

The Capitol Police are governed by the three man Capitol Police Board, one of whose members is the Senate Sergeant at Arms. The Rules Committee has authorized the Sergeant at Arms to implement the information system support requirements for time and attendance, inventory control, etc., submitted by the Capitol Police.

The Computer Center has acquired the UFO software package to assist programmers in writing programs. One of the first systems to be developed using this tool will be the Time and Attendance System.

TELECOMMUNICATIONS DEPARTMENT

This department is responsible for the supply and management of telecommunications services to Senate offices. The Computer Center has developed a system which processes the telephone company billing tapes to assist in auditing these voluminous records.

SENATE COMPUTER CENTER

The Senate Computer Center (SCC) maintains a facility in B-106 of the Dirksen Building in order to make services and distribution of reports more accessible and convenient to Senate offices.

The SCC is equipped with two IBM 370/158-3 computers with associated processors operating under OS/MVS. A plan is now being developed to upgrade the processors and will be submitted to the committee for consideration.

Online processing support to Senators' Washington and state offices

is provided through a network of private cable, dial-up, and leased carrier facilities connected to either data switching equipment or to the COMTEN 3690 communications processors located at the SCC. The COMTEN units also provide data communications to the Library of Congress and other outside computer services.

All Senators and most committees are furnished computer terminals to access and add to various data bases. All data bases are initiated and maintained by responsible user offices via terminals in those offices. There is no data entry facility in the SCC.

ADVANCED TEXT MANAGEMENT SYSTEMS (ATMS)

The Rules Committee has authorized a pilot project to test the use of the Advanced Text Management Systems (ATMS) in several Senators' offices.

SENATE INFORMATION RETRIEVAL SYSTEMS (HARVEY)

Senators require independent, accurate, comprehensive, and timely information to assist them in their legislative tasks, in the formulation of legislative issues, in the drafting of legislation, and in their representative functions. Information is needed on all legislative and investigative activities of Senate committees and conferences in an accurate and understandable manner. Senate Information Retrieval Systems provide Senators, committees, officers, and their staffs with responsive access to information that will assist them in their legislative tasks.

1981: RULES AND PRECEDENTS

Two new data base systems, both of which are described in detail below, were announced by the Rules Committee Chairman on November 16, 1981, in a dear colleague letter:

"On behalf of the Senate Majority Leader, Senator Howard H. Baker, and the Committee on Rules and Administration, I am pleased to announce the availability of a new information system for use by Senators and their staffs on computer terminals located in their Capitol and Senate office building suites. This new information system was authorized by the Committee at the request of the Majority Leader and is composed of precedents of the Senate and the Senate Standing Rules. The System was developed by staff in the Secretary and Sergeant at Arms' offices, and the Rules Committee.

All precedents which have occurred since June 30, 1980, have been entered into the system and thus serve to provide a supplement to the 1981 edition of Senate Procedure. Additional precedents will be entered as often as possible. In future years older precedents selected by the Parliamentarian for current applicability will be added to the Precedent Data Base.

The first part of the Rules Data Base consists of the 42 Standing Rules. During the second session of this Congress, the nonstatutory standing orders and resolutions affecting the business of the Senate, and provisions of public laws relating to the Senate will be added to the Rules Data Base. As changes and additions occur to this information, the data base will be updated accordingly.

The Majority Leader and I expect these data bases to be extremely valuable to Members and staff of the Senate. We welcome your comments and suggestions on this new information service."

RULES

The Standing Rules of the Senate are the embodiment of the provision in Article I, Section 5 of the Constitution which authorizes each House of Congress to "determine the Rules of its Proceedings." Originally adopted during the first session of the Congress in 1789, the

Senate has readopted or made only seven general revisions of its rules since that time. The most recent of these revisions occurred with the adoption of S. Res. 274 by the Senate on November 14, 1979. Certain of the standing rules were subsequently consolidated and renumbered pursuant to S. Res. 389, agreed to by the Senate on March 25, 1980.

Just as the Senate is a continuing body, so too are its standing rules. The rules of the Senate continue from one Congress to another "unless they are changed as provided in these rules." When cloture is invoked, changing Senate rules requires "a two-thirds majority of the Senators present and voting, a quorum being present."

There are now 42 Standing Rules of the Senate, beginning with Rule I which establishes a president pro tempore who presides over the Senate in the absence of the Vice President as provided for in Section 3, Article I, of the Constitution. Additional rules provide for the order of business in the Senate, procedures for floor consideration and debate of legislation, the Senate committee system and the jurisdiction and functions of its standing committees. Rules are also provided for executive sessions of the Senate and the consideration of treaties, nominations, and other matters.

The computerized retrieval system of the Senate rules contains all 42 rules together with the descriptive names of the rules and the subject indexing terms assigned to each rule by staff of the Committee on Rules and Administration. As changes occur to the rules, and as additional subject indexing terms are assigned to individual rules, the computerized system will be updated to reflect those changes and additions.

During the second session of the 97th Congress, the "Nonstatutory Standing Orders and Resolutions Affecting the Business of the Senate" and the "General and Permanent Laws Relating to the Senate" will be added to the Rules Data Base. This additional information will be the same as that found in those respective sections of the *Senate Manual*.

PRECEDENTS

The precedents of the Senate comprise the body of procedural law under which the Senate conducts its business. They are interpretations of the rules, standing and ad hoc orders and unanimous consent agreements of the Senate, as well as Constitutional and statutory provisions relevant to the Senate. A precedent occurs when the Presiding Officer rules on a point of order or responds to a parliamentary inquiry, and when the Senate votes on a Constitutional question, or on an appeal from a ruling of the Chair, or on a point of order which the Chair in its discretion submits to it. The Parliamentarian's Office, which interprets and compiles the precedents, will enter them into the data base of this file so as to include the following elements: a subject matter heading and subheading, where appropriate; a headnote stating the procedural point enunciated; the statement of fact from which the precedent arose; and the citation to the Congressional Record.

Initially all precedents which have occurred since June 30, 1980, will be entered to provide a supplement to the 1981 edition of *Senate Procedure*. This file will be updated as often as possible, given the interpretative nature of the data. In future years older precedents selected by the Parliamentarian for current applicability will be added to the data base.

CRS-TERMINATING PROGRAMS

The newest on-line CRS data base, Terminating Programs, was requested by the Senate Majority Leader and the Chairman of the Rules and Administration Committee. The Terminating Programs File in the CRS American Law Division is a data base containing descriptions of federal programs or activities which are scheduled to expire on an ascertainable date. The File also contains a listing of one-time and recurring reports due the Congress by federal agencies and the deadline dates for such reports. The generic term "Terminating Programs" will be used to refer to all types of programs, activities, or reports.

Information on each terminating program includes the expiration or deadline date, the bill number and public law date, the U.S. Code and Statutes at Large citation, congressional committee and subcommittee names, the name of the government organization with responsibility for the terminating program, the type of terminating program involved, and subject terms.

The file is updated whenever programs are created, added, changed or terminated.

ELECTRONIC COMPOSITION AND PRINTING

CONGRESSIONAL RECORD

The Congressional Record is the largest volume document produced by the Congress. Over 40,000 copies are printed daily and distributed as provided by law (44 U.S.C. 906). At the close of each session of Congress, about 2,500 copies of the daily proceedings are consolidated, indexed, printed, and bound as the permanent edition of the Record.

In January 1980, the Government Printing Office (GPO) began composing the House and Senate Journals electronically as a pilot test toward automation of the Congressional Record. The Journals were selected as the pilot project because of their similarity in format to the Record, and the fact that the Journal text can be composed and proofread over a period of several days in a production environment. In April, the GPO began electronic composition of the Extension of Remarks portion of the Record. All the required software has been tested and proven for electronic composition of the remaining portions of the Record in January 1981. The House portion of the Congressional Record was successfully converted to electronic photo composition in 1981; the Senate part of the Record was converted at the beginning of 1982.

In conjunction with the long-range objectives of reducing costs, waste, and duplication in the composition, printing, and distribution of congressional documents, the micrographics task force of the Joint Committee on Printing (JCP) surveyed the current uses of the Record with a view toward reducing costs of the Congressional Record program via microform production and distribution. In the coming year the task force will analyze the results of the survey and make recommendations to the JCP.

CONGRESSIONAL RECORD INDEX

The task force on the Congressional Record Index studied the present procedures of the Congressional Record Index Office, the ways in which people access the information, and suggestions for improving the Congressional Record indexing procedures. The objective for automating and standardizing the index is to provide informational content of the Congressional Record easily and rapidly to the Members of Congress as generators and users of the information.

The Record Index task force presented the following recommendations to the Advisory Committee:

(1) That the Congressional Record Index Office and the Congressional Research Service use a common indexing vocabulary, wherever possible.

(2) That a group composed of representatives from all units using the Legislative Indexing Vocabulary (LIV) be established to agree on standard indexing terms, provide on-going communication, and establish procedures for providing input to LIV.

(3) That the Congressional Record Index Office do its indexing on-line and as soon after production of the Record as possible.

(4) That the Congressional Record Index Office and Senate LEGIS should exchange data.

(5) That an on-line retrieval of an index to the Congressional Record be available to all Members of Congress, their staff, committees, and other legislative branch groups via a common data base.

(6) And, that a technical advisory group be established to work with GPO and the Congressional Record Index Office.

In December of 1981, the Joint Committee on Printing approved the implementation of the first phase of a project which ultimately will provide the Congress with an on-line index to the daily Congressional Record.

POLICY ANALYSIS SUPPORT SYSTEMS (HICKS)

The objective of the policy analysis support systems is to provide computer data bases with analytical and reporting capabilities which Senators and committees may draw upon in the analysis of policy issues. There are seven major components. They are: the Program Review System, the Federal Assistance Awards Analysis System, the Budget Analysis System, the Statistical Analysis Applications, Special Policy Analysis Data Bases, Econometric Modeling, and the Geographic Reporting System. The first two are discussed in this section. They are all included in the appendix.

The Program Review System is an on-line computer system operated on the Senate computer using visual display terminals in committee offices. The Program Review System supports Senate committees in the congressional budget process, the authorization process, and the program review and oversight processes.

Through use of the Program Review System committees can (1) establish and maintain computer data bases of information about the financial and performance aspects of programs within their jurisdiction; (2) perform comparative and statistical analyses of the data in order to discern relationships and to test hypotheses about the effects of alternate program levels; and, (3) produce printed reports from the data base using on-line printers in committee offices or the high-speed printers in the central computer room.

The system provides the following capabilities:

1. Loading committees' files from other data sources such as OMB's Budget Preparation System, GAO's Legislative and Program Information System, CBO's Five Year Projections System and various agency systems;
2. Addition, deletion, modification, and display of records using visual display terminals located in committee offices;
3. Printing predefined reports on printers located in committee offices or on the high speed line printer or the Xerox 9700 high speed page printer in the computer center;
4. Specifying, through a record created at the visual display terminal, characteristics of individualized reports such as —
 - a. the records to be included or excluded, based on components of the record identification number, fund type, committee jurisdiction, user codes, and column values (records within or outside ranges of values can be selected or excluded);
 - b. the sort sequence, using key fields of the record identification number, user codes and a column value;
 - c. subtotaling (up to 15 levels) using key fields of the record identification number and user codes;

- d. selection of up to 40 columns from the 500 column data base;
 - e. page headings;
 - f. rounding;
 - g. page number prefixes and beginning numbers;
 - h. printing subtotal and total lines only;
5. Creation of calculated columns based on mathematical operations involving columns or columns and constants. Calculations can be performed on all records in a data base or only on subsets of a data base. Subsets can be defined by components of the record identification number (for example, agency), committee jurisdiction codes, fund type, user codes, and column values. Records can be included in or excluded from the subset using equal, not equal, greater than, or less than conditions, singly or in combination;
 6. Transfer of data between data bases with options of adding records to the data base to which data is transferred; and
 7. Display of reports on the display terminal; printing on the office local printer; or initiating remote printing on the high-speed line printer or the Xerox 9700 page printer, through a transaction on the display terminal.

In budget related applications, central "read-only" data bases are established containing all budget accounts, and containing approximately 400 amount fields from the OMB budget tape and from the 5-year projections system of the Congressional Budget Office. Re-estimates are added to the data bases when they are received. Committees copy the desired columns to their own data bases as needed. This simplifies committees' file management operations and frees up space in their data bases. Committees can also prepare individualized reports from the central data bases.

Work with GAO, committees, and agencies regarding compilation of a program inventory continues. Revisions based on interaction between committees and agencies are expected to continue for some time. The GAO data collection process has stabilized, although some agencies continue to have difficulty meeting the submission dates necessary for program data to reach committees in time for use in consideration of their March 15 reports. Loading program data received on computer tape from GAO to committees' PRS data bases has been routinized.

Future work includes addition of outlays from the Treasury Department; addition of CBO current status information, including logic capabilities in the report writer; graphic output on committees' on-line display terminals and printers; and output of PRS data bases to the Statistical Analysis System (SAS), including SAS/Graph. Plans for the future also include development of a separate system for Member and committee office expense accounting.

FEDERAL ASSISTANCE AWARDS ANALYSIS SYSTEM

A new application was developed in 1981, the Federal Assistance Awards Analysis System (FAAAS), which provides Senators and committees with reports of federal assistance awards on a quarterly basis. The information for FAAAS comes from the Federal Assistance Awards Data System, FAADS, a data collection and dissemination system operated by the Executive Branch. FAADS computer tapes, which are

received quarterly, contain information on individual assistance award transactions. For each transaction, there is information on the county, city, congressional district, recipient, and federal program. FAADS reports are of two kinds: statistical summaries and detailed lists in a variety of sequences. A directory of FAADS reports is available on request, and special reports can be prepared.

APPENDIX

APPLICATION SERVICES TO SENATORS AND COMMITTEES

The Committee on Rules and Administration and the Sergeant at Arms provide a variety of computerized support services for the cost-effective operation of the Senate. These services are available to Senators and their committees in three general categories. The Senate's Information Retrieval Systems provide Senators and their staffs with responsive access to information that will assist them in their legislative tasks. The Senate's Policy Analysis Support Systems provide the computer capability and technical support needed to effectively assist the Senate in the analysis of policy issues. The Senate's Office Automation Systems respond to Senators needs for orderly, controlled and cost-effective operation of their offices.

These systems are listed in alphabetical order beginning on the next page (p. 12).

TRAINING AND ASSISTANCE

Training and user assistance is provided by the Sergeant at Arms. The Senate's Educational Services staff will answer general questions relating to terminal use, and provide assistance in accessing the computer. Training courses for Legis, Scorpio, ATMS and the Program Review System include personal instruction, training manuals, and practice in using the systems via terminals (phone 224-1517).

CMS training is provided to offices by the CMS-Senate User Representative staff (phone 224-5912).

Questions concerning policy on computer usage should be directed to the Committee on Rules and Administration (phone 224-9078).

INFORMATION RETRIEVAL SYSTEMS

LEGIS

The Senate's Legislative Information System (Legis) became fully operational during the first session of the 95th Congress. Official Senate information for bills, resolutions, and amendments concerning the sponsorship, co-sponsorship, official title, and statements of purpose, as well as the comprehensive floor, committee, subcommittee and conference status, and scheduling and reporting data were entered and verified by staff of the Secretary of the Senate. With the completion of the Senate computer programming for the Senate's legislative measures, including floor amendments and their respective legislative status, together with the installation in the Senate Computer Center (Office of the Sergeant at Arms of the Senate) of the Library of Congress' Scorpio, Logic Library and Libra Software, several important goals of the Rules and Administration Committee were realized. These include:

(1) committee scheduling; time, date and location of committee meetings, hearings, and conferences available via terminals in every Senator's office;

(2) a nightly updated Legis/Scorpio data base for all Senate users using the same retrieval language as on-line data bases at the Library of Congress; 100 Senators' offices and 14 committees became fully trained Legis users during the 96th Congress;

(3) on-line files of amendments pending on the Senate floor, the Majority Leader's Daily Schedule, the Assistant Majority Leader's Whip Notice, and News about Legis for all Senate users;

(4) on-line or overnight data exchange with the Library of Congress and House Information Systems and the incorporation of Library and House data not previously in the Senate Legis data base.

The Senate Legis System has been implemented as an on-line, interactive data base computer system possessing a flexible capability for expansion into all official areas of Senate activity. As an umbrella information system, Legis has now been extended to cover a wide variety of Senate official recordkeeping, printed reports, and on-line retrieval functions. The system was further designed to facilitate the exchange of information in an on-line mode with the House of Representatives, the Library of Congress, and the Government Printing Office. Computer software has been designed and programmed for ease of modification as new procedures are adopted or modified, as new categories of information are added to the system, and as new report and computer terminal retrieval requirements are identified. Software costs have been shared by the Senate, the Library of Congress, and the House of Representatives. Where possible, software developed by one computer center has been transferred and installed in either of the other two computer centers.

During the 97th Congress, more summary and status information on bills, resolutions, and amendments was added to all Legis files. This includes statements of purpose for amendments, additional detailed status information for floor, committee, subcommittee, and conference actions, and cross reference information supplied by the Senate Daily Digest Office and the Bill Digest Section in the Congressional Research

Service. This data is in addition to the digest, abstract, subject indexing and House of Representatives information already supplied to previous Bill Status and Bill Digest systems.

A number of additional Legis capabilities and related services were completed after its introduction. Significant among these are:

- Presidential Messages, Executive Communications, and Petitions and Memorials. Data was supplied to the Legis System by the Executive and Legislative Journal Clerks beginning in January 1979;

- Nominations received by the Senate and the Executive Clerk beginning in January 1981;

- Installation of new Scorpio retrieval system features, including full text search capability in the Senate Legis file and the Libra software for generating batch reports from Scorpio files. These features were made available to all Senate users beginning in early 1979;

- Completion of an on-line programming task which provides the capability for designated Senate staff to add Senate subject terms to legislative and other items in the Legis system; and

- Completion by the Senate User Support Group of user documentation for Legis, the on-line and batch Legis capabilities, and data entry documentation for the Secretary of the Senate.

- Co-sponsors added or withdrawn for use in the daily issue of the Congressional Record and the Senate Journal;

- Simplified techniques for using the Senate Scheduling System for all Senate users; and

- House floor amendments added to Senate Legis data base.

The Senate Computer Center also programmed reports for purposes of auditing official data bases and for providing editing and verification capabilities to committee clerks, the Bill Clerk, the Daily Digest Clerk, and staff in the Senate Library.

Additional Legis and Scorpio display formats have been provided for all Senate Legis users. These include forward and reverse chronology for all status actions, the sorting of status by subcommittees within the same committee, "all" and "summary" options for information concerning a respective measure or amendment, and free text information regarding committee memberships, changes in committee sizes, temporary committees and committee memberships, and relevant legislative and party caucus information regarding committees and committee membership.

Concurrent with the achievement of these goals, a number of Legis printed reports authorized by the Rules Committee were programmed during the 95th and 96th Congresses by staff of the Senate Computer Center. The most important of these were official reports for the Secretary of the Senate, Senate committees, and each individual Senator. These reports contain comprehensive information of all Senate measures, Senate actions on House measures, and all final actions on measures which cleared both Houses. Important examples of these reports include:

- Official ledgers provided to the Senate Bill Clerk for bills, resolutions, printed amendments, unprinted amendments, and all Congressional status actions for these legislative measures. These reports replace the manual ledgers in the Secretary's Office;

—The Index and History of bills and resolutions which have assisted the Senate Journal Clerk in the preparation of the Senate Journal since 1978;

—Printed reports of bills, resolutions, and amendments for each Senate committee calendar clerk. These reports contain all official information for measures acted upon by each respective committee;

—Legislative Activity Reports for each Senator. These reports are in six parts, organized by measures sponsored, measures co-sponsored, committee of referral for measures sponsored, committee of referral for measures co-sponsored, with a subject index to each of these legislative items at the back of the report;

—On-line and batch reports providing current information on actions which have occurred in the Senate for the same day, and meetings, hearings, and conferences scheduled that same day; and

—Auto-tracking reporting capability for Senators and committees; this Legis Service became available to the Senate in December 1979.

LEGIS-AUTO-TRACKING

The auto-tracking service assists Senators and staff in monitoring legislation of particular interest. Whenever a legislative action occurs, or a co-sponsor is added, or an amendment is submitted for one of the measures being monitored, the new information about the measure is included in auto-tracking reports for the next day.

With Senate auto-tracking, legislation can be monitored several ways:

1. Senator's sponsored measures and amendments.
2. Senator's co-sponsored measures and amendments.
3. All measures referred to a particular committee or subcommittee (Senate or House).
4. Individual measures by measure number.
5. All measures on a particular subject (using the indexing terms and phrases that are present in the Legis system).

In the daily auto-tracking report, measures are divided into the above five categories. No measure is printed more than once. If, for example, a Senator's sponsored measures and all measures referred to a committee are being monitored, and a co-sponsor is added to one of the Senator's sponsored measures that was referred to the committee, the information about the new co-sponsor will appear in the "Sponsored Measures" section of the auto-tracking report, and will not appear in the "Committee Referral" section.

The auto-tracking reports are printed on pre-punched three-hole paper. Two options are available as to the form of the reports:

1. Legislative status information: either entire legislative history whenever a legislative action occurs, or only the new actions.
2. The report can be printed in "continuous print" list format, or it can be printed with each measure starting on a new page.

LEGIS-COMMITTEE MEETING AND HEARING SCHEDULES

The Senate Committee Scheduling System, mandated for development by the Rules Committee in S. Res. 4, 95th Congress, has been implemented as part of Legis. Information about all Senate committee, subcommittee, and conference meetings, hearings, and mark-ups is

presently being entered by the Secretary of the Senate as soon as this information is known. Once entered, daily schedules for all such activities can be viewed on computer terminals located throughout the Senate. In addition, an individual Senator's schedule can be retrieved, as well as those for specific committees and subcommittees. Staff directors can also view all meetings and hearings scheduled for the members of their committees.

THE LIBRARY OF CONGRESS AND THE
CONGRESSIONAL RESEARCH SERVICE DATA BASES

New Scorpio features, including the capability for retrieving documents and abstracts by searching text words, were applied to several data bases. One of these, the Capitol Information Services' abstract file for the 94th, 95th, and 96th Congress' daily issue of the Congressional Record was found to be much more effective as a research and reference file with the addition of a text retrieval capability.

Data files for three General Accounting Office directories of report abstract and index records were received by the Library's Information Systems Office. Two of these, GAO's directory of information sources and systems and its directory of recurring reports required of federal agencies were brought up as Scorpio data bases for use by all Congressional offices. A third, the GAO directory of federal program evaluations was made available during the first session of the 96th Congress.

In addition, the Library of Congress maintains an automated information system containing several data bases to which the Senate has access through computer terminals. These data bases include the Legislative Information File (beginning with the 93rd Congress), the Bibliographic Citation File, the Major Issues File, the Congressional Record Abstracts File, the National Referral Center Resources File, the Library of Congress Computerized Catalog, and the Machine Readable Catalog (MARC).

VOTE TALLY

A record of all quorum calls and record votes occurring on the Senate floor is maintained by the Bill Clerk via terminals and accessed by the Republican Policy Committee, the Republican Conference, and the Democratic Policy Committee. Work will begin in 1982 to expand the capabilities of the present system and to provide access by individual Senators to displays of Senate record votes.

OFFICE AUTOMATION SYSTEMS

TEXT PROCESSING AND RECORDS MANAGEMENT SYSTEMS

Text processing and records management systems provide Senators, committees, and administrative offices of the Senate timely, cost effective control over the growing volume and diversity of congressional documents. Senate offices allocate substantial staff resources to the production, collection, filing, and disposition of a wide variety of publications which they generate and receive. Effective management of these documents is crucial to providing information to Senators and committees for their legislative, investigative, and agency oversight activities.

The objectives for implementing computer assisted records management and text processing systems in the Senate are to reduce the cost of drafting and printing congressional documents, improve the timeliness and quality of legislative documents, and provide rapid and reliable access to office and committee information.

BILL DRAFTING

The computer aided bill preparation system provides a comprehensive capability to the Office of Legislative Counsel for drafting bills, amendments, simple and concurrent resolutions, treaties, and other documents required by the Senate; and provides for the transfer of legislative measures to the GPO for direct electronic composition, or to the House for redrafting.

CORRESPONDENCE MANAGEMENT SYSTEM

The Correspondence Management System, referred to as CMS, aids Senators in answering constituent letters promptly, accurately, and in a personalized manner. CMS is a complete office management system offering a unified approach to constituent support functions. CMS facilitates control over office management, allows follow-up with constituents interested in specific legislative issues, and creates an historic record of all office activity for subsequent use by the Senator and his staff.

ELECTRONIC PRINTING

Various techniques for electronically composing documents generated by and for committees are available. Committee staff can use ATMS (see text editing) to create committee calendars, committee reports, and other documents for electronic composition at GPO. Committees can order hearing transcripts from commercial reporting firms on magnetic tape in a format compatible for electronic composition by the Government Printing Office.

INDEXING: ELECTION CAMPAIGN RECORDS

The Election Campaign Records Indexing System was created in 1972 to help the Office of Public Records meet the requirements of the Federal Election Campaign Act of 1971. This system provides for the indexing of documents submitted by candidates and committees supporting candidates, and the cross-referencing of these documents to provide faster access to specific data on microfilm.

INDEXING: INQUIRIES AND INVESTIGATIONS

Through the Inquiries and Investigations Abstracting and Indexing System, voluminous file of documents pertaining to a committee investigation can be abstracted and indexed for production of chronological and relational lists (such as authors, subject, key-words, etc.) for maintenance of indexes to the documents themselves. The systems provide key-word-in-context (kwic) capabilities, location of records using single or multiple, coded or free-text, data elements, and on-line entry, edit and report production.

INDEXING: LEGISLATIVE HISTORIES

Through the Legislative History Indexing System, indexes to legislation histories can be prepared. The indexes can be multi-level and can reference individuals, subject terms, and provision numbers. The indexes can be updated on-line if desired. (The first legislative history index prepared using this system was of the Congressional Budget and Impoundment Control Act of 1974, prepared at the request of the Congressional Budget Office. The ten volumes of hearings, reports and other documents comprising the history are available on microfilm.)

INDEXING: LITIGATION FILES

The Litigation Indexing System provides the Senate Legal Counsel with capabilities for entry, storage, cross-referencing, and retrieval of document abstracts relating to litigation files. In addition to creation and access of indexes to files through interactive terminals, the system supports edits at time of entry, updating capabilities, comparative and relational searches, and selective sorts. Limited output can be displayed on-line and extensive output can be printed.

INDEXING: OFFICE FILES

The Office Index System provides a simple and flexible cross-indexing service for the organization of office documents. Cross-indexing is a useful tool for reliable retrieval of documents stored on microfilm, assembling a Senator's legislative history, cross-indexing relevant printed and internal material, and tracking selected projects.

JURIS-LEGAL INFORMATION RETRIEVAL

Juris, an acronym for Justice Retrieval and Inquiry System, is an information retrieval system containing case law, Modern Federal Practice Digest, Statutory Law, and over 4,000 briefs filed by the litigating divi-

sions of Justice and selected by attorneys' offices. The data base is available on subscription and maintained by the Department of Justice. The Senate Legislative Counsel and the Senate Legal Counsel both use Juris. In addition, the Legislative Counsel is experimenting with the use of the pilot statutory retrieval system developed by House Information Systems as part of their integrated law revision and retrieval system for the House of Representatives Law Revision Counsel. Statutory data for the system is supplied from the publication developed by the Government Printing Office.

MICROFILMING

Microfilming office records provides a storage and retrieval system for the management office files. Microfilm reduces the storage space occupied by the same records on paper, eliminates valuable man-hours spent in sorting and filing paper records, and prevents misfiling, alteration, and loss.

MICROGRAPHICS PUBLICATIONS

The Senate Library has an extensive collection of congressional publications, executive agency documents, newspapers, magazines, and other materials on microfiche and microfilm. Users of the microfilm collection may either read the materials on a reader in the Library's Micrographics Center or borrow a portable reader from the Library to use in his/her office. The microfilm materials can be reproduced on reader/printers located in the Senate Library. The Library uses automated reference services, such as the New York Times Information Bank and Nexis, to locate specific information for Senators and their staffs. Requests for information may be made in person or by phone (224-7176).

NEWSLETTER ADDRESS FILE

The Newsletter Address File permits Senators to store and update constituent names and addresses. Upon request, selected names and addresses are printed on mailing labels to be attached to newsletters.

PARKING DEPARTMENT

This department was established to develop a method for efficient use of the available parking space and to administer the allocation of this space. To this end, the on-line Parking System was developed and is operational in the Computer Center.

POLICY COMMITTEE INFORMATION SYSTEM

An automated system provides statistical analyses of attendance, vote times, and voting patterns on a recurring basis.

POLICY ANALYSIS SUPPORT SYSTEMS

BUDGET AND PROGRAM REVIEW

The Senate Program Review System is an interactive system for the preparation and revision of data in tabular form to support such aspects of Congressional decision making as the authorization, oversight and the budget resolution processes. The rows of the tables present the various programs and activities under consideration, and the columns present historical funding information, various current funding requests and decisions, and the committee alternatives. Comparison columns allow the effects of alternative recommendations to be seen readily. This is discussed in more detail in the body of this report.

BUDGET ANALYSIS SYSTEM

The reports in the Budget Analysis System are produced from the OMB Budget Preparation System tapes upon release of the President's budget recommendations in January, March, and July. Special runs are made as requested.

The purpose of the Budget Analysis System is to extract and resequence information on the Budget Preparation System tapes to display information about the budget recommendations and re-estimates not reflected in published budget documents. The BAS reports have been distributed to committees and legislative staff agencies for the past six years and to Senators' offices requesting them for three years.

Analysis reports can be prepared using such elements as:

1. organizational unit (agency or bureau);
2. object classification (personnel, rent, etc.);
3. function or subfunction;
4. fund type (trust funds, public enterprise funds, etc.);
5. new vs. existing programs;
6. receipt types (general fund, proprietary, etc.);
7. program and financing schedule resource measures (obligations, outlays, unobligated balances, etc.);
8. outlays by source of budget authority (new budget authority, obligated balances, unobligated balances, etc.);
9. controllable vs. uncontrollable spending; and
10. authorizing and spending committee jurisdiction.

A Directory of BAS Reports is available to requesting offices. The Directory includes a description and a sample page for each report.

The Program Review System is also used to prepare special reports requested by Senators and committees, such as exploration of the effects of different percentage changes in selected object classes, functions, and accounts; comparison of current services estimates with administration requests; and display of the estimates for the four years following the budget year.

ECONOMETRIC MODELING

Six econometric modeling services are available on subscription to committees of the Senate: Chase Econometric Associates, Data Resources, Inc., Evans Economics, Inc., Merrill-Lynch Economics, Townsend-Greenspan, and Wharton Econometric Forecasting Associates. These models provide the capability to test forecasts of U.S. economic conditions, elements of consumptive expenditure, investment, foreign trade, employment, and other items of national interest. Economic analysis through the Regression Analysis of Time Series program of VAR Econometrics is also available at the Senate Computer Center.

FEDERAL ASSISTANCE AWARDS DATA BASE SYSTEM

See discussion in the body of this report.

GEOGRAPHIC REPORTING SYSTEM

The Geographic Reporting System (GRS) provides Senators and committees, on request, with special analyses of information regarding the distribution of federal funds, received annually from the Community Services Administration (CSA). The GRS reports supplement the *Geographic Distribution of Federal Funds* (GDFF), published by CSA with special extracts and calculations, and with different arrangements of the information. For example, through GRS, per capita grant amounts for a state can be compared with per capita grant amounts for another state, a group of selected states, or with the entire nation. Also, the distribution of program amounts among all or selected counties could be produced.

In response to requests from Senators and committees, 25 different reports for the analysis of single-year files, each with 13 variations, have been developed. In addition, multi-year reports at county level can be prepared. Selected demographic data from the Bureau of the Census or other sources can be included in the analysis of federal fund data.

The Community Services Administration has recently been abolished and the Office of Management and Budget suspended compilation of the *Geographic Distribution of Federal Funds*. It is expected that such compilation will be resumed next year but not in as much detail. The Senate Computer Center will retain the GDFF tapes from previous years for use in analysis of past programs.

GRAPHICS

Maps of the United States and standard business graphs (bar charts, pie charts, scatter diagrams, curves, etc.) can be prepared in support of member and committee surveys, issue analyses, and investigations.

QUESTIONNAIRE TABULATION

Computer programs are available that provide simple tabulations, cross tabulations, and frequency distributions of survey data.

STATISTICAL ANALYSIS AND SPECIALIZED DATA BASES

The principal uses of the statistical analysis capability are: (1) tabulation and analysis of constituent surveys by Senators, either multi-issue surveys or in-depth surveys on a single issue; (2) analysis of results of surveys conducted by, or of other data acquired by committees; and (3) direct analysis by committees of information in specialized data bases. Surveys conducted by committees are typically related to a particular commercial, industrial, consumer, or other group associated with a policy issue. Both U.S. maps and standard business graphs (bar charts, pie charts, scatter diagrams, curves) can be prepared in support of surveys and investigations.

In surveys, statistically reliable results are sought through the use of scientifically selected samples and follow-up of non-responses. The Planning and Survey Research Section of the CRS General Government Division, the staff of the Senate Computer Center's Statistical Analysis Section, and the Rules Committee's Technical Services staff work together in assisting committees' and Senators' offices in sample selection, design of survey instruments, and interpretation of results. Standard procedures have been developed for handling survey questionnaires, follow-up letters, and responses. Copies are available on request.

Several specialized data bases have been established for committees. With such data bases committees can maintain and update information on subjects within their jurisdiction and test the results of alternate policies.

Topics investigated through these means have included:

1. Department of Defense manpower requests;
2. Countercyclical revenue sharing;
3. Ownership and control of U.S. corporations;
4. Financial conditions of central city businesses;
5. Fiscal condition of U.S. cities;
6. Economic concentration in the motor carrier industry;
7. Effects of federal policies on State tax systems;
8. Economic plans of high technology business;
9. Extent and nature of fraudulent schemes against the elderly; and
10. Evaluation of renal dialysis treatment costs.

In addition the Senator's equipment inventory system was adapted for use by the Joint Committee on Printing for its review of the inventories of equipment in government printing plants.